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ASN: XEHB-6-00-11

DESCRIPTION: **Combined Modification Document -
Modification Note 49
TCTO 31P1-4-108-563
EEM 6345.1 Change 24, Chapter 21
Installation of a Gasket and Teflon
Tape to the Blower Assembly in the
Transmitter Cabinet**

DATE OF ISSUE: November 29, 2000

QUANTITY OF ISSUE: EACH

INSTALLATION OF A GASKET AND TEFLON TAPE TO THE BLOWER ASSEMBLY IN THE TRANSMITTER CABINET

DOPPLER METEOROLOGICAL RADAR WSR-88D



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COMMERCE, THE AIR FORCE, THE NAVY, AND TRANSPORTATION

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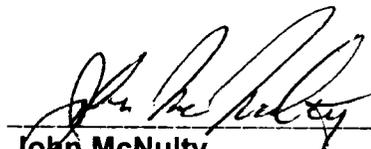


Tue Nov 07 11:07:19 2000

Date 11/07/2000

Gregg W. Dvorak
Acting Program Director for Operational Support

NWS APPROVAL:



Date 11/29/00

John McNulty
Chief, Maintenance, Logistics,
and Acquisition Division

DoD APPROVAL:

BY ORDER OF THE SECRETARY OF THE AIR FORCE

MICHAEL E. RYAN, General, USAF
Chief of Staff



Date 12-6-00

Edward L. Berkowitz, Chief
Program Branch
Radar Operation Center
TOMA

1. SUBJECT

Installation of a Gasket and Teflon Tape to the Blower Assembly in the Transmitter Cabinet.

2. PURPOSE

This document provides instructions to install new angle brackets, containing a new gasket, to the blower assembly and to install teflon tape around the plenum opening to prevent the new gasket material from ripping on exposed screws. This modification will improve the reliability of the R400-3PS2 Focus Coil Power Supply saving the site unnecessary downtime. The authority for this modification is Radar Operations Center (ROC) Engineering Change Proposal (ECP) F0076, Add Brackets with Gaskets to 3B3B2 Blower.

For additional information concerning this document, contact the ROC Hotline, Norman, OK; phone number: (800) 643-3363 or (405) 366-2980 or by e-mail at NEXRAD.Hotline@noaa.gov. An electronic copy of this document can be found at the following internet address: www.roc.noaa.gov/ssb/sysdoc/techman/tmlinks.asp

3. SITES AFFECTED

This modification applies to all WSR-88D Radar Data Acquisition (RDA) sites.

4. ESTIMATED COMPLETION DATE

This modification must be completed and reported no later than 60 days after receipt of this document and kit.

5. EQUIPMENT AFFECTED

Transmitter System.

6. SPARES AFFECTED

The removed angle frame will be kept as an on-site spare.

7. MODIFICATION ACCOMPLISHED BY

Site electronics technicians will accomplish this task. Two technicians are required to perform these procedures.

8. MATERIAL REQUIRED

Nomenclature	Part Number	NSN	Qty
Kit A (Single Thread Sites)			
a. Angle Bracket with Gaskets	2310009-301	5340-01-475-5338	2 each
b. Tape, Teflon	2200066-201	5970-01-476-5494	1 roll
c. Knife, Exacto	3203	5110-01-097-4481	1
d. Kit, Accessories	2340007-301	NWS0-01-880-0001	1
(1) Tiewraps			5
(2) Labels			2
Kit B (Redundant Sites)			
e. Angle Bracket with Gaskets	2310009-301	5340-01-475-5338	4 each
f. Tape, Teflon	2200066-201	5970-01-476-5494	1 roll
g. Knife, Exacto	3203	5110-01-097-4481	1
h. Kit, Accessories	2340007-301	NWS0-01-880-0001	2
(1) Tiewraps			10
(2) Labels			4

9. SOURCE OF MATERIALS

Kits are requisitioned by the ROC Retrofit Management team and shipped at no cost to the site.

10. SPECIAL TOOLS AND TEST EQUIPMENT REQUIRED

Exacto knife, part number 3203, NSN 5110-01-097-4481, will be required to perform the installation procedures.

11. TIME AND PERSONNEL REQUIRED

Work Phases	Work-hours
Unpacking	.10
Disassembly	.40
Installation	.30
Assembly	.0
Operational Check	.20
Total Work-hours	1.0

12. DOCUMENTS AFFECTED

Illustrated Parts Breakdown, WSR-88D Doppler Radar, dated May 15, 2000
NWS EHB 6-501, Change 1
AF TO 31P1-4-108-4, Change 1
FAA TI 6345.1 V2, Change 1
NAVY AB-IPB-010, Change 1

13. VERIFICATION STATEMENT

This modification was successfully installed at Vance AFB, OK.

14. DISPOSITION OF REMOVED AND REPLACED PARTS/MATERIALS

The removed angle frame will be kept on-site to be used as a spare.

15. PROCEDURES

See [ATTACHMENT 1](#).

16. FAA DISTRIBUTION

This directive is distributed to selected offices and services within Washington headquarters, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, regional Airway Facilities divisions, and Airway Facilities field offices having the following facilities/equipment: NXRAD.

17. CHANGES TO TABLE OF CONTENTS (FAA)

This chapter will be included in the next revision to the table of contents for FAA Order 6345.1, Electronics Equipment Modification Handbook - Next Generation Weather Radar (NEXRAD).

18. RECOMMENDATIONS FOR CHANGES (FAA)

Forward any recommendations for changes to this directive through normal channels to the National Airway Systems Engineering Division, AOS-200, Operational Support.

19. REPORTING INSTRUCTIONS

a. NWS

Report completed modification on WS Form A-26, Engineering Management Reporting System Maintenance Record, according to the instructions in Engineering Handbook No. 4 (EHB-4), Engineering Management Reporting System (EMRS), part 2. Include the following information on the WS Form A-26:

- An Equipment Code of RDA in Block 7.
- The appropriate serial number in Block 8.
- A Mod No. of 49 in Block 17a.

See ATTACHMENT 3 for a completed sample of WS Form A-26.

b. DoD

Update the AFTO Form 95 to show TCTO compliance. Report TCTO compliance in accordance with TO 00-20-2, Table 3-10, Rule 9.

c. FAA

Enter this directive number, date, and chapter number on the appropriate FAA Form 6032-1, Airway Facilities Modification Record.

Use the Maintenance Management System (MMS) application Log Equipment Modification (LEM) function to report the completion of this modification. Verify "N" is in the REP COD field to ensure the log entry will be upward reportable to the national data base for access by AOS. This directive should be entered into the LEM fields as follows:

- (1) Order No.: 6345.1
- (2) Chapter: 21
- (3) Change: 24

NWS: EHB-6, Modification Note 49
DoD: TO 31P1-4-108-563
FAA: EEM Modification Handbook 6345.1 CHG 24, Chapter 21

d. DOD and FAA

Complete [ATTACHMENT 2](#) and return the information to the ROC by one of the four methods below:

- (1) Mail Address: Program Branch, Retrofit Management Team
 WSR-88D Radar Operations Center
 3200 Marshall Ave., Suite 101
 Norman, Oklahoma 73072-8028

- (2) Fax Number: (405) 366-6553
 ATTN: Retrofit Management Team

- (3) E-mail Address: NEXRAD.Logistics@noaa.gov

- (4) Web Version: <http://www.roc.noaa.gov/ssb/logistics/complete/>

ATTACHMENT 1

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY

Tools Required

Screwdriver set, Phillips and flat tip
Utility knife, Exacto

NOTE

If an RDA/RPG Remote Access Terminal is installed, refer to the corresponding keystrokes applying to the system (i.e., <Enter> versus <Return> and <Alt><Tab> versus <Shift> and <Port> keys). RDA/RPG Remote Access Terminal keystroke differences will be located in the conversion chart provided with the RDA/RPG Remote Access Terminal installation kit. All keystrokes having a double underline will require the technician to refer to the conversion chart for the applicable key strokes (i.e., <Return> will convert to <Enter>).

1. Perform the following shutdown procedures:
 - a. Transfer transmitter control to the local RDA terminal by performing the followings steps at the Unit Control Position (UCP) terminal.
 - (1) Verify the Radar Product Generation (RPG) Main menu is displayed. If not, press **<F1>** to display the RPG Main menu.
 - (2) At the RPG Main menu, select the RDA Control menu by entering **RD<Return>** on the command line.
 - (3) Check the RDA Control Field in the status area of the Main menu. If the control field displays RDA CNTL RPG proceed to step 1.a.(5). If the control field displays RDA CNTL RDA or RDA CNTL (BLANK) proceed to the next step.
 - (4) Enable local control of the RDA by entering **EN<Return>** on the command line. Verify the feedback line displays COMMAND EXECUTED RD EN.
 - (5) If the RDA terminal is in Systems Console mode, press the **<Shift>** and **<Port>** keys simultaneously.

NOTE

NWS Redundant: Switch must be set to position A.

- (6) Verify the RDA Main menu is displayed. If not, enter **MAIN<Return>** on the command line.

ATTACHMENT 1 (Continued)

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY

- (7) At the RDA Main menu, enter **RELC**<Return> on the command line to request local control from the UCP. Verify **LOC** appears in the MODE field to indicate the RDADP is now in local control.

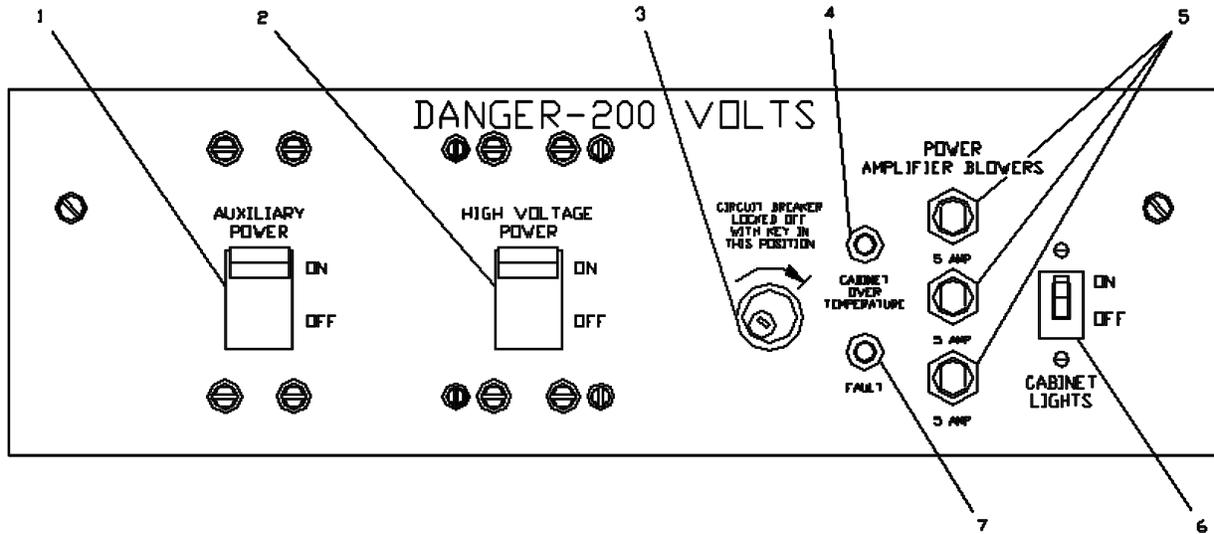
CAUTION

Do not use the <Shift> and <Clear> keys while running the RDA Application program. Pressing the <Shift> and <Clear> keys will cause the keyboard to lock up.

- b. Terminate the RDA program, and place the RDA in standby mode by performing the following steps at the RDA terminal:
 - (1) At the RDA Main menu, enter **STBY**<Return> on the command line. Verify **STBY ACCEPTED** is displayed on the feedback line.
 - (2) At the RDA Main menu, enter **TERP**<Tab>*password*<Return> on the command line, and verify **TERP ACCEPTED** is displayed.
 - (3) Simultaneously press the <Shift> and <Port> keys to enter into the Systems Console.
- c. At the transmitter, obtain maintenance control with high voltage off by performing the following steps (see [figure 1](#) for controls and indicators):

ATTACHMENT 1 (Continued)

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY



1. (CB2) Auxiliary Power ON/OFF Circuit Breaker
2. (CB1) High Voltage Power ON/OFF Circuit Breaker
3. Lock
4. (DS6) Cabinet Over Temperature Indicator Lamp
5. Power Amplifier Blower Fuses
6. (CB3) Cabinet Lights ON/OFF Circuit Breaker
7. (DS7) Fault Indicator Lamp

Figure 1. Controls and Indicators

ATTACHMENT 1 (Continued)

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY

- (1) On the Transmitter Control Panel A1, at the operation and test section, verify the transmitter is in system control by observing the CONTROL MAINT/SYSTEM switch/indicator. Verify the SYSTEM indicator is lit (amber) and the CONTROL MAINT indicator is not lit.

NOTE

Steps 1.c.(2) and 1.c.(3) verify high voltage is off.

- (2) Observe the CONTROL HV ON/NO CONTROL switch/indicator. Observe HV ON indicator is not lit and NO CONTROL indicator is lit (amber).
 - (3) Observe the CONTROL HV OFF/NO CONTROL switch/indicator. Observe HV OFF indicator is lit (white) and NO CONTROL indicator is lit (amber).
 - (4) Place the transmitter under maintenance control by pressing and releasing the CONTROL MAINT/SYSTEM switch/indicator. Observe MAINT indicator is lit (white) and SYSTEM indicator is not lit.
 - (5) On the CONTROL HV OFF/NO CONTROL and CONTROL HV ON/NO CONTROL switch/indicators, verify NO CONTROL indicators are not lit.
- d. Turn off power to the transmitter by performing the following steps:
- (1) At the Transmitter Power Distribution Panel UD3A13, set the CABINET LIGHTS (CB3) and HIGH VOLTAGE POWER (CB1) circuit breakers to **OFF**. Set the AUXILIARY POWER (CB2) circuit breaker to **OFF**.
 - (2) Lock the HIGH VOLTAGE POWER ON/OFF circuit breaker CB1 to the **OFF** position by rotating the interlock key clockwise to the lock position.
 - (3) In single channel systems, at the power distribution panel number 2, turn **OFF** circuit breakers CB1, CB3, CB5 (Ganged), and CB7. In redundant systems, at the Secondary Panel number 1 for channel 1 or the Secondary Panel number 2 for channel 2, turn **OFF** circuit breakers CB1, CB3, CB5 (Ganged), and CB7.

2. Perform the following Cabinet Blower assembly removal procedures:

WARNING

Failure to perform the transmitter power-down procedures listed above could cause serious injury or death.

- a. Open the left bay outer door.

ATTACHMENT 1 (Continued)

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY

WARNING

Use a grounding stick to ground the terminals to be disconnected before touching them. High voltage could be present even after primary power is shut-off due to capacitors in the circuit. Failure to comply could cause serious injury or death.

- b. Remove and hold onto the interlock key.

WARNING

Blower B3 is a V-belt driven rotating equipment and dangerous to service personnel if not handled cautiously.

- c. Remove the blower assembly enclosure front cover by removing the (3) three flat-head screws and (9) nine captive screws.
 - d. Remove the (2) two bolts and washers securing the blower assembly mounting plate to the cabinet.
 - e. If applicable, disconnect cable ties from the blower power cable.
 - f. Disconnect the blower motor power plug P1 from the blower motor.
 - g. Using the handle on the mounting plate, slide the blower assembly B3 out of the cabinet.
3. Perform the following steps to install Teflon tape around the blower plenum opening of the transmitter cabinet:
 - a. Ensure all screws around the blower plenum opening, toward the rear of the cabinet, are tight.
 - b. Using the Teflon tape and the Exacto knife provided in the kit, cut (4) four pieces 14 inches long.
 - c. Apply one piece of 14-inch Teflon tape to each vertical and horizontal edge of the blower plenum opening. The tape should extend approximately 1/2-inch over the sharp edge of the opening.
 - d. Using the Exacto knife, slit the tape at the corners of the plenum opening, and fold the tape over the sharp edges of the opening (see [figure 2](#)). It may be necessary to trim the Teflon tape to maneuver around the center plenum opening support.

ATTACHMENT 1 (Continued)

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY

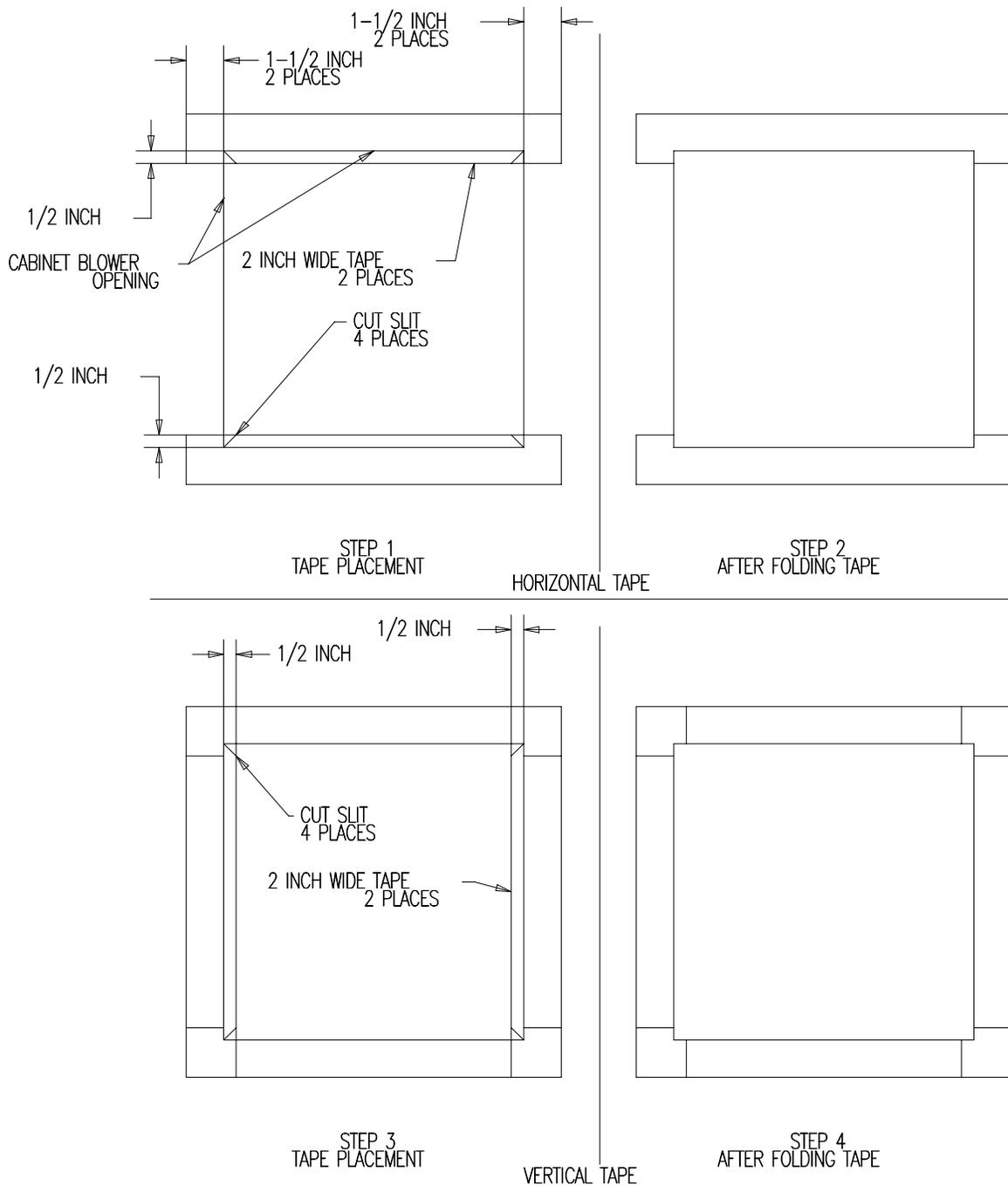
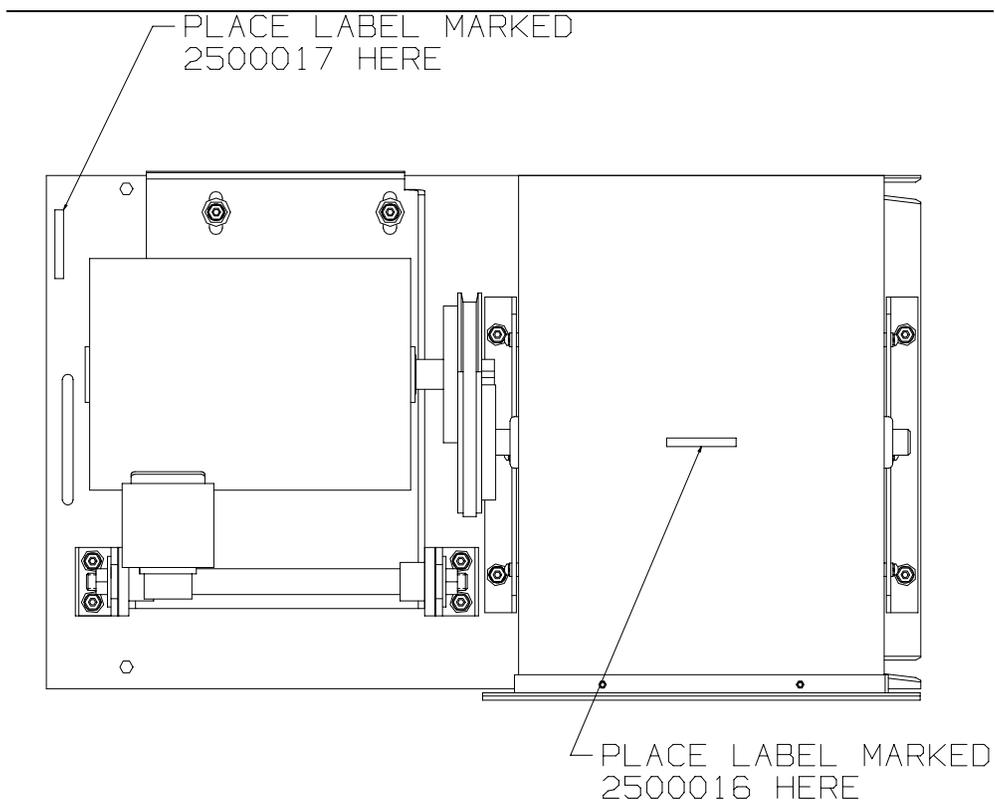


Figure 2. Teflon Tape Over Plenum Opening

ATTACHMENT 1 (Continued)

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY

4. Perform the following steps to install the new bracket assembly along with gaskets:
 - a. Using a proper holding screwdriver, remove the (2) two-piece frame sealing the blower housing assembly to the cabinet.
 - b. Attach the new bracket and gasket assembly, using the screws removed in the previous step, to the blower housing assembly.
 - c. Perform the belt tension adjustment Preventive Maintenance Instruction (PMI) 2-031, in EHB 6-503-2 (AF TO 31P1-4-108-6WC-2, FAA TI 6345.1 V4), if necessary.
 - d. Using the labels provided in the kit re-identify the blower assembly and the blower (see figure 3).



Top View

Figure 3. Re-identification Label Locations

ATTACHMENT 1 (Continued)

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY

- e. Push the blower assembly all the way into the cabinet enclosure.
 - f. Install the (2) two bolts and washers to secure the blower assembly mounting plate to the cabinet.
 - g. Reconnect the blower motor plug P1 to the blower motor, and tiewrap the power cable to the transmitter cabinet.
 - h. Replace the blower enclosure front cover with the screws previously removed.
5. Perform the following procedures to return the system to normal operations:
- a. In single channel systems, at the Power Distribution Panel number 2, turn **ON** circuit breakers CB1, CB3, CB5 (ganged), and CB7. In redundant systems, at the Secondary Panel number 1 for channel 1 or Secondary Panel number 2 for channel 2, turn **ON** circuit breakers CB1, CB3, CB5 (ganged), and CB7.
 - b. On the Transmitter Power Distribution Panel UD3A13, reinstall and rotate the HIGH VOLTAGE POWER circuit breaker CB1 interlock key counterclockwise.
 - c. Set the following circuit breakers to **ON**: Cabinet lights (CB3), Auxiliary Power (CB2), and then High Voltage Power (CB1).
 - d. Verify the blower is operating properly and no air flow related alarms exist.
 - e. On the Transmitter Control Panel A1, at the operation and test sections, perform the following steps:
 - (1) At the operations section, wait for the STATUS PREHEAT indicator to go out and the STATUS AVAILABLE indicator to light (green).
 - (2) At the metering section, use controls and indicators (see [figure 4](#)) to ensure appropriate transmitter operating parameters are within tolerances indicated on the parameter record card in the holder at the bottom of the Transmitter Control Panel A1.

ATTACHMENT 1 (Continued)

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY

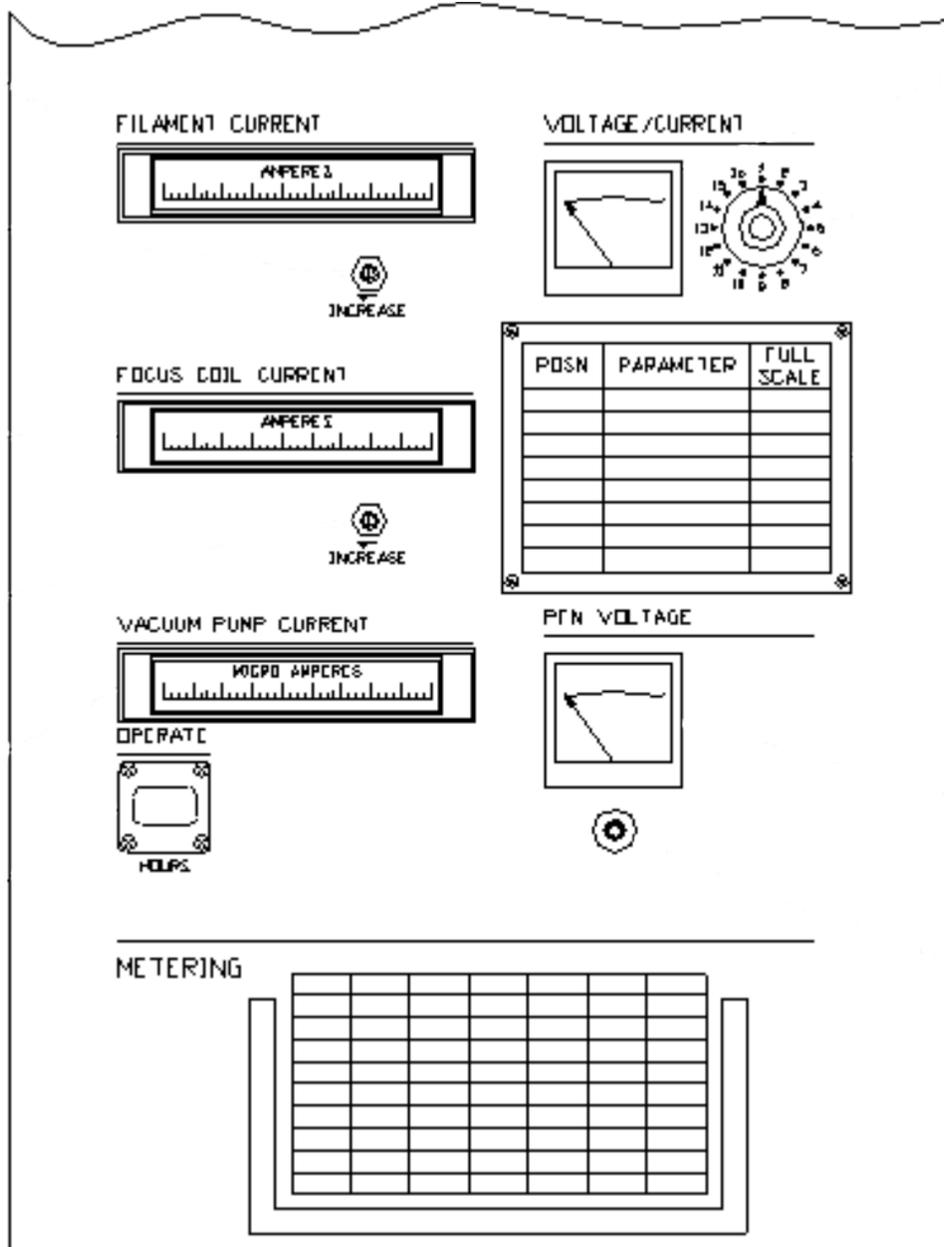


Figure 4. Transmitter Control Panel A1, Metering Section, Location of Controls and Indicators

ATTACHMENT 1 (Continued)

INSTALLATION OF A GASKET ASSEMBLY TO THE BLOWER ASSEMBLY

- (3) At the operation and test sections, place the transmitter under system control by pressing and releasing the CONTROL MAINT/SYSTEM switch/indicator (if SYSTEM indicator is not already lit). Observe SYSTEM indicator is lit (amber) and CONTROL MAINT indicator is not lit.
- f. At the RDA terminal, perform the following steps:
- (1) Verify the Systems Console mode is displayed. If not, simultaneously press the <Shift> and <Port> keys.
 - (2) At the Systems Console, enter **RDAUP**<Return> and observe the RDA Console Mode Operations display logo appears.
 - (3) After the RDA terminal is up, shift to the Applications Terminal by pressing the <Shift> and <Port> keys simultaneously.

NOTE

If at a redundant system on the non controlling channel, skip step 5.f.(4) and proceed to step 5.f.(5).

- (4) Place the system in operate by entering **OPER**<Return> on the command line. Verify the message OPER ACCEPTED is displayed.
- (5) Enable remote control by entering **ENRC**<Return> on the command line. Observe the message ENRC ACCEPTED is displayed.
- (6) Close left bay outer door.

NWS: EHB-6, Modification Note 49
DoD: TO 31P1-4-108-563
FAA: EEM Modification Handbook 6345.1 CHG 24, Chapter 21

ATTACHMENT 2

BLOWER ASSEMBLY MODIFICATION RETURN FORM

Site Name: _____

Site Identifier: _____

Total Time to Complete this Modification Document: _____

Technician's Name(s): _____

Technician's Phone Number: _____

Date Completed: _____

Problem(s) Encountered:

Upon completion of this form, return the information to the ROC using one of the four methods below:

1. Mailing Address: Program Branch, Retrofit Management Team
WSR-88D Radar Operations Center
3200 Marshall Ave., Suite 101
Norman, OK 73072-8028
2. FAX Number: (405) 366-6553
ATTN: Retrofit Management Team
3. E-mail Address: NEXRAD.Logistics@noaa.gov
4. Web Version: <http://www.roc.noaa.gov/ssb/logistics/complete/>

		ENGINEERING MANAGEMENT REPORTING SYSTEM MAINTENANCE RECORD			Document Number G 50249	
General Information		1. Open Date 08 / 01 / 00	2. Initials TJS	3. Response Priority (check one) <input type="radio"/> Immediate <input type="radio"/> Routine <input checked="" type="radio"/> Not Applicable	4. Close Date 08 / 01 / 00	5. Time 1030
5. Description INSTALL GASKET AND TEFLON TAPE TO BLOWER ASSEMBLY IN TRANSMITTER CABINET.						
Equipment Information		6. Station ID FFC	7. Equipment Code RDA	8. Serial Number AA4282080	9. TM M	10. AT M
12. EQUIPMENT OPERATIONAL STATUS TIMES		a. Fully Operational []	b. Logistics Delay []	c. Partly Operational []	d. Logistics Delay []	e. All Other 1:30
13. Parts Failure Information						
Block #	a. ASN	b. NSN	c. AT	d. Qty.	e. Maint. Hrs.	f. Staff Hrs.
1						
2						
3						
4						
5						
14. Work Load Information						
Type						
a. Routine						
b. Non-routine						
c. Travel						
d. Misc. 3:00						
e. Overtime						
15. Miscellaneous Information						
16. Initials TJS						
17. SPECIAL PURPOSE REPORTING		a. Mod. No. 49	b. Mod/Act./Deact. Date 08/01/00	c.	d.	e.
18. CONFIGURATION MGMT. REPORTING (use as directed)		ASN	Vendor Part Number (New Part)	Serial Number (Old Part)	Serial Number (New Part)	